

GUJARAT TECHNOLOGICAL UNIVERSITY**MBA SEMESTER-2- EXAMINATION – SUMMER 2020****Subject Code: 4529205****Date: 09/11/2020****Subject Name: Production & Operations Management****Time: 10:30 AM TO 1.30 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 Explain following terms in brief: 14

- 1) PERT V/s. CPM
- 2) Circular Layout
- 3) Work Station
- 4) Enterprise Resource Planning (ERP)
- 5) Block diagram
- 6) Six Sigma
- 7) Kanban

Q.2 (a) Define Production and Operation Management and also discuss the Scope of it. 07

(b) Describe the basic features of manufacturing process types with suitable examples. 07

OR

(b) Discuss various factors affecting to plant layout and also discuss its different types. 07

Q.3 (a) What is Aggregate Production Planning? Discuss the strategies in aggregate planning to manage demand & supply. 07

(b) What do you understand by Operations Scheduling? Also discuss Types of Operations Scheduling techniques. 07

OR

Q.3 (a) Define assembly line balancing and also explain the process of it.

(b) What do you understand by Quality? Discuss various Quality dimensions for Food and beverages Industry 07

Q.4 (a) Reyansh Enterprise produces bicycles. It produces 450 bicycles a month. It buys the tyre for bicycles from a supplier at a cost of Rs.200 per tyre. The company's inventory carrying cost is estimated to be 15% of cost and the ordering is Rs.500 per order. From the above data find out,

- a) Economic Order Quantity (EOQ)
- b) What is the number of orders per year?
- c) Compute the average annual ordering cost.
- d) Compute the average inventory.
- e) Compute the average annual carrying cost
- f) Compute the total cost.

Q.4 (b) What is Total quality management (TQM)? Explain the basic purpose of TQM.

OR

- Q.4 (a)** The management of Hirva Enterprise is going to erect a maintenance building with a connecting electrical generator and water tank. The activities, activity descriptions, and estimated durations are given in the following table :

Activity	Description	Activity Predecessor	Activity Duration (Weeks)
a	Excavate	-	2
b	Erect Building	a	6
c	Install Generator	a	4
d	Install Tank	a	2
e	Install Maintenance equipment	b	4
f	Connect Generator	b, c, d	5
g	Point on a finish	b	3
h	Check out facility	e, f	2

You are require to construct the network for this project, identify the critical path, and determine the project duration time.

- Q.4 (b)** Write a note on Industrial safety & safety management.

Q.5

CASE STUDY

Queuing Model in Retail Sector in this COVID-19 Pandemic Situation

Big retailers, which are presently dispensing only essential items after the lockdown, are taking precautionary measures like restricted entry and marked lines to maintain social distancing to avoid coronavirus infection at their stores. Some stores as Reliance Mart, D-Mart, Bigbazar are even screening body temperature of their customers before allowing them entry into the store. Majority have marked special lines on their shop floors to maintain social distancing. They are also regularly sanitizing the stores and disinfecting all touch points which include trolley and basket handles.

Avenue Supermarts that runs D-Mart stores, is handing out coloured coupons to its customers waiting outside in the open area and then allowing entry of a particular colour at a time as part of its crowd management plan. They are calling out the colour as yellow, green and then 20 to 30 people are walking inside the store. When these people out from the store, then we call the next colour.

Some has initiated a token system to manage the customers and avoid a large gathering inside the store. The tokens are properly sanitized with disinfectants and then handed over to customers.

Walmart India, which operates in cash & carry format, has also marked lines and is only

permitting one person per membership card. They have marked the floors of our Best Price stores with yellow stripes and boxes to designate enough space for each member to maintain safe distance from each other. The stores are also equipped with contactless thermometers for conducting temperature checks. Entry is barred for those detected with fever and high-touch surfaces of our stores are being regularly cleaned with disinfectant. Most of the retailers have closed access to other segments as apparels etc within the store and are operating within one-third of their space.

Future Group has also put marks near the billing counters of its Bigbazar and Easyday stores so that people maintain the mandatory distance of three feet.

However several retailers are also facing lots of problems regarding to handle the customers after the lock down.

(a) Analyze the problem mentioned in above case study of Retail sector in this COVID-19 Pandemic Situation. **07**

(b) Develop Queue Management System for Retail sector especially in this COVID-19 Pandemic Situation. **07**

OR

(a) If you are the store manager of any company, than what steps to be taken to handle the crowd in the store in this COVID-19 Pandemic Situation? **07**

(b) Evaluate the impact of your decision regarding safety, social distancing from the side of customers and employees. **07**